

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P590734

Luminaire Tested: FSR-24-2-LD4-4HI-35-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590734  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4HI-35-UNV-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

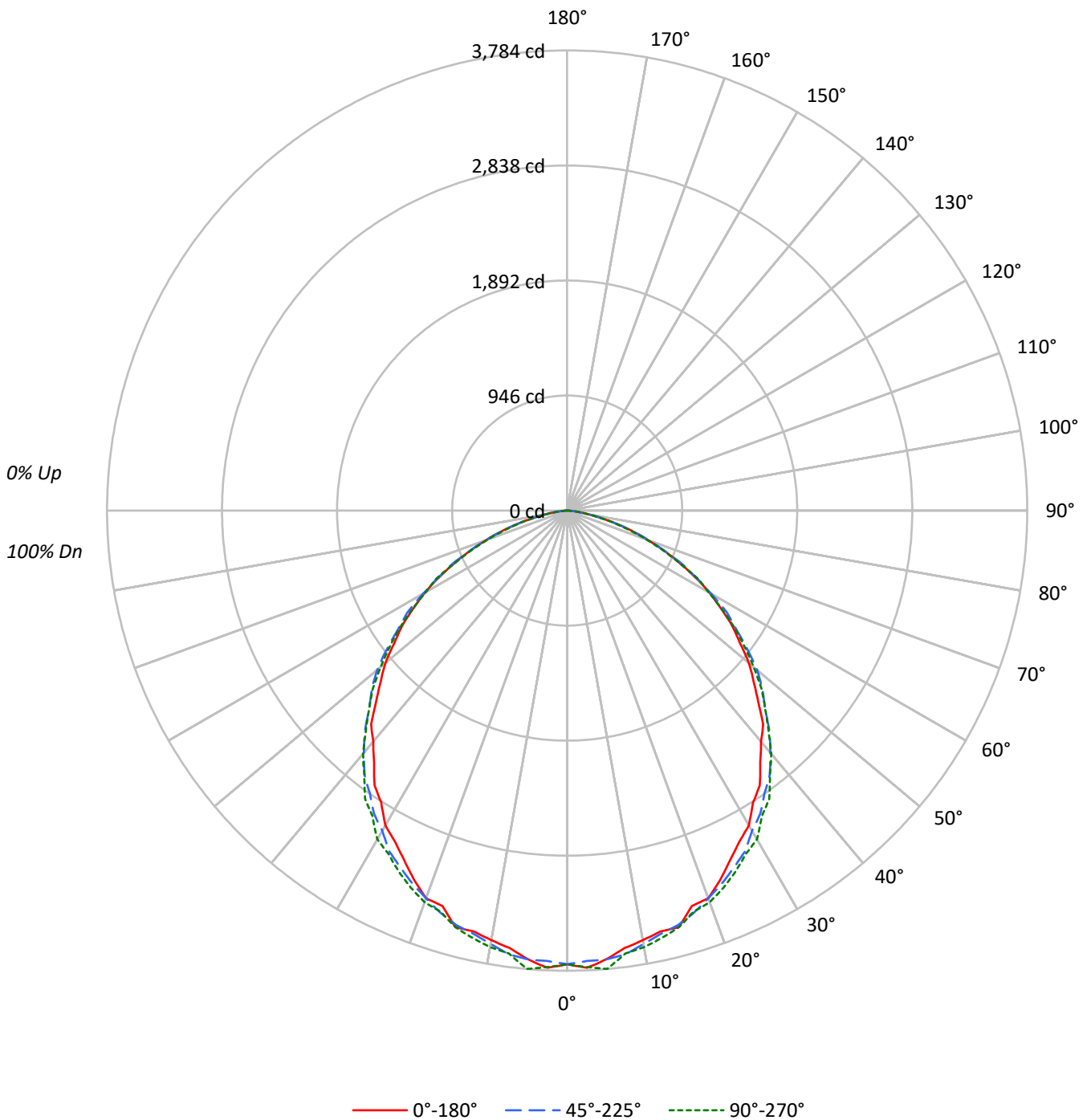
Lumens per Lamp: N/A  
Luminaire Lumens: 9402.0 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20																		
RC	80									70									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10039	10039	10039
5°	10005	10009	10220
10°	9803	9888	9958
15°	9880	9826	9882
20°	9713	9713	9817
25°	9415	9620	9726
30°	9285	9448	9700
35°	9066	9304	9513
40°	8714	9133	9174
45°	8450	8751	8764
50°	8173	8542	8378
55°	7787	7939	7882
60°	7282	7354	7222
65°	6493	6658	6447
70°	5570	5590	5434
75°	4412	4402	4232
80°	2955	2873	2762
85°	1606	1590	1488

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8976 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	350.9	3.7
10°-20°	994.5	10.6
20°-30°	1490.0	15.8
30°-40°	1765.9	18.8
40°-50°	1769.2	18.8
50°-60°	1501.8	16.0
60°-70°	1012.5	10.8
70°-80°	444.9	4.7
80°-90°	72.3	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2835.4	30.2
0°-40°	4601.4	48.9
0°-60°	7872.3	83.7
0°-90°	9402.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9402.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3730	3730	3730	3730	3730	
5°	3704	3695	3705	3694	3784	349
15°	3546	3506	3527	3546	3547	988
25°	3171	3188	3240	3282	3276	1466
35°	2760	2768	2832	2898	2896	1714
45°	2220	2262	2300	2359	2303	1718
55°	1660	1649	1692	1680	1680	1476
65°	1020	1006	1046	1006	1012	1014
75°	424	416	423	394	407	455
85°	52	51	52	50	48	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3730.5	3730.5	3730.5	3730.5	3730.5
2.5°	3762.7	3734.3	3707.8	3738.7	3757.4
5°	3704.0	3695.3	3705.4	3694.4	3783.5
7.5°	3627.9	3661.1	3680.4	3668.3	3673.6
10°	3587.4	3575.9	3618.7	3648.6	3644.3
12.5°	3544.1	3561.4	3563.8	3596.1	3599.0
15°	3546.5	3505.5	3527.2	3545.5	3547.0
17.5°	3408.7	3453.0	3468.0	3509.9	3457.9
20°	3391.9	3359.6	3391.9	3434.7	3428.0
22.5°	3288.3	3252.2	3321.5	3359.6	3357.2
25°	3170.8	3188.1	3240.1	3282.5	3275.8
27.5°	3067.7	3087.9	3162.1	3220.4	3182.8
30°	2988.2	2978.1	3040.7	3092.8	3121.7
32.5°	2846.1	2882.8	2956.0	3007.5	2980.0
35°	2759.9	2768.1	2832.2	2897.7	2895.8
37.5°	2609.2	2647.2	2737.3	2755.6	2738.7
40°	2480.6	2518.6	2600.0	2619.8	2611.6
42.5°	2385.7	2392.4	2462.3	2484.9	2448.8
45°	2220.5	2261.9	2299.5	2358.7	2302.8
47.5°	2079.8	2099.1	2180.0	2195.9	2166.5
50°	1952.2	1958.9	2040.3	2020.6	2001.3
52.5°	1791.8	1820.2	1866.0	1862.1	1839.5
55°	1659.8	1648.7	1692.1	1680.5	1680.0
57.5°	1501.3	1520.6	1556.3	1537.9	1508.6
60°	1353.0	1353.5	1366.5	1345.8	1341.9
62.5°	1187.8	1193.6	1196.4	1170.9	1212.3
65°	1019.7	1006.2	1045.7	1005.7	1012.5
67.5°	865.1	871.8	868.0	842.9	852.5
70°	708.0	716.7	710.5	682.0	690.7
72.5°	564.5	553.9	560.7	525.0	541.4
75°	424.3	415.7	423.4	393.5	407.0
77.5°	289.0	295.7	290.9	275.0	284.2
80°	190.7	185.4	185.4	176.3	178.2
82.5°	111.3	106.0	104.5	101.6	106.0
85°	52.0	50.6	51.5	50.1	48.2
87.5°	18.8	19.3	19.3	18.3	17.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)